

**Project Design Phase-I**  
**Proposed Solution Template**

Date	4th-November 2023
Team ID	592358
Project Name	Walmart Store Sales Forecasting
Maximum Marks	2 Marks

**Proposed Solution Template:**

Project team shall fill the following information in proposed solution template.

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	The problem to be solved is to accurately forecast the sales of Walmart stores, with a specific focus on understanding the impact of promotional markdown events and holidays, such as Christmas, Thanksgiving, Super Bowl, and Labor Day. This forecasting is crucial for Walmart to make informed inventory, staffing, and marketing decisions to optimize their operations and customer satisfaction.
2.	Idea / Solution description	Our solution involves building a sales forecasting system for Walmart stores using advanced machine learning algorithms, including ARIMA, Random Forest, and XGBoost. We will use historical sales data, store information, and holiday-related information to develop models that can predict future sales with high accuracy. The system will also incorporate a Flask-based web interface for easy data input and visualization, making it user-friendly for Walmart's staff.
3.	Novelty / Uniqueness	The uniqueness of our solution lies in its ability to not only provide accurate sales forecasts but also specifically highlight the impact of holidays and promotional markdown events on sales. The incorporation of multiple machine learning algorithms ensures robust predictions. Moreover, the integration of Flask for data input and visualization simplifies the process for end-users, making it a unique and user-friendly solution tailored for Walmart's needs.
4.	Social Impact / Customer Satisfaction	Accurate sales forecasting is essential for Walmart to ensure that they have the right products in stock, the right number of staff, and effective marketing strategies in place. This, in turn, leads to improved customer satisfaction as customers can find what they need when they visit Walmart, without facing stockouts or overstock situations. Additionally, optimizing staffing levels means better working conditions for employees and improved customer service, enhancing the overall shopping experience.
5.	Business Model (Revenue Model)	The business model can be structured as a software-as-a-service (SaaS) solution. Walmart can pay a subscription fee for access to the forecasting system. Revenue can also be generated by offering premium features or customizations to meet specific store needs. Moreover, Walmart can

		benefit from cost savings and increased profits by using accurate sales forecasts, which justifies the investment in the solution.
6.	Scalability of the Solution	Our solution is highly scalable as it can be deployed to multiple Walmart stores across different regions. The system can handle data from a growing number of stores and adapt to changing market conditions. It can be easily scaled to accommodate the expansion of Walmart's retail operations and the inclusion of additional features or data sources as needed in the future.